

#### REMARKS

In a final Office Action dated April 19, 2007, the Examiner rejected the claims under 35 U.S.C. § 112, first paragraph. Applicants respond to the Examiner's rejection below. All newly presented amendments are intended to place the claims into condition for allowance. In view of the amendments noted above and the remarks presented herein, Applicants respectfully request reconsideration of the merits of this application.

#### Rejections Under 35 U.S.C. § 112

The Examiner rejected Claims 1-13 under 35 U.S.C. § 112, first paragraph for failing to comply with the enablement requirement. The Examiner alleged that the specification does not enable claims directed to methods of predicting predisposition in non-humans, to methods that consider associations between other polymorphisms within monoamine oxidase A (MAOA) or polymorphisms in genes that may be linked to MAOA expression, to methods that predict predisposition to additional phenotypes, or to methods that relate other environmental risk factors to these or additional phenotypes.

Applicants amend Claim 1 to recite that methods consistent with the subject matter acknowledged by the Examiner to meet the enablement requirement. See p. 2-3 of the Office Action. Applicants reserve the right to pursue claims of different scope in a continuing application.

Applicants amend Claims 2, 3, 6 and 10 to be consistent with amended Claim 1 and cancel pending Claims 4, 5, 7-8 and 12-13 and previously withdrawn Claims 14-26 without prejudice to the filing of one or more divisional applications. In view of the amendments noted above and the remarks presented herein, Applicants respectfully request reconsideration of this rejection as applied to the pending claims.

SUPPLEMENTAL REMARKS RESPONSIVE TO  
ADVISORY ACTION AND TELEPHONE INTERVIEW

The alleged new issues requiring further consideration and/or search are addressed by the filing with this supplemental response of a Request for Continued Examination.

In the Advisory Action, the Examiner asserted that the phrase "or at risk of experiencing" in Claims 1 and 3 is not enabled by the Specification. Applicants respectfully assert and maintain that the invention claimed is enabled both for human subjects who have experienced, and those who are at risk of experiencing, childhood maltreatment. This significant aspect underlies the rationale for the inventors' work, notably, efforts to avoid a mental disorder phenotype in subjects predisposed to such a phenotype. The predisposition involves two components, namely a genetic component, as claimed, and a prior determination of experience or risk of experience of childhood maltreatment.

Childhood maltreatment is a universal risk factor for, e.g., antisocial behavior. As Applicants noted in paragraph [0004] of the application as filed, boys who experience abuse -- and more generally, those exposed to erratic, coercive, and punitive parenting -- are at risk of developing conduct disorder, evidencing antisocial personality symptoms, and of becoming violent offenders. That relationship is well-known. Behaviors giving rise to childhood maltreatment are also well understood. As applicants noted in paragraph [0017], the DSM-IV (incorporated by reference into the application) provides guidelines that identify childhood maltreatment factors relating, for example, to psychological trauma or psychosocial stress.

Accordingly, the art is familiar with behaviors that when experienced during childhood by a human subject would place that subject at risk for experiencing childhood maltreatment. One important point of the inventors' work was to show the specific confirmatory relationship between such experience and the mental disorder phenotype in subjects having the indicated genotype. In demonstrating that relationship, Applicants enabled an assessment of the predisposition that takes into account both the subject's genotype and the risk of maltreatment, precisely because behaviors associated with childhood maltreatment are well understood. It

simply makes no sense, scientifically or as a matter of social policy, to require a subject to experience those behaviors before making the assessment as claimed.

The Examiner suggested that the data do not show the association with those at risk of experiencing childhood maltreatment. Applicants counter that because the data show the relationship in subjects who have experienced childhood maltreatment, one can logically conclude that if subjects at risk of experiencing maltreatment were allowed to be maltreated and carried the indicated genotype, they too would be predisposed to a mental disorder phenotype. On their face, the data presented support and enable the claimed methods, even in subjects merely at risk of childhood maltreatment.

As to the issues of new matter, the Examiner indicated that the alleged new matter arises in the proposed amendments to Claim 6. Amended Claim 6 as presented in this response specifies that the childhood maltreatment is selected from the group consisting of exposure to psychological trauma and exposure to psychosocial stress.

During the interview, the Examiner indicated discomfort with Claim 10 as amended, but imposed no formal rejection. The Examiner questioned whether it would be possible to counsel a subject to avoid childhood maltreatment and suggested that it would be difficult to simply tell a child to avoid being maltreated. The Examiner misses the point. As noted above, behaviors associated with childhood maltreatment are well understood. Support systems, in the mental health and child protective services fields, are widely available and numerous counseling strategies can be employed to avoid, or to lessen the risk, of childhood maltreatment. As above, this ability to spot subjects at risk and to take action, is a principal pursuit of the inventors' work.

Reconsideration is respectfully requested.

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Examiner: Juliet C. Switzer

Fees

A petition for a three-month extension of time accompanies this response so that the response will be deemed to have been timely filed. Should any extension be required in this or any subsequent response, please consider this to be a petition for the appropriate extension of time and a request to charge the extension fee to Deposit Account No. 17-0055.

No other fee is believed due in connection with this submission; however, if a fee is due, in this or any subsequent response, please charge the fee to the same Deposit Account.

Respectfully submitted,

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